I claim:

1. A joint assembly comprising:

a first member having a first surface at a first angle to an external surface of the first member and formed of a first material;

a second member having a second surface at a second angle to an outer surface of the second member and formed of a second material which is different from the first material, each of the first and second materials being characterized by a shear modulus and the second angle being a function of the shear modulus of the first and second materials and of the first angle;

a bonding material which bonds the first and second members together, the bonding material being characterized by a bonding stress;

the first angle being determined according to the equation:

$$\sin \phi = \frac{\sigma^a}{\sigma^c}$$

where σ^a is the bonding stress and σ^c is a shear stress of the first material; and

the second angle being determined according to the equation:

$$\tan \beta = \frac{G^c_{yz}}{G^s_{y'z}} \bullet \tan \phi$$

where G^c_{yz} is a shear modulus of the first material in the y-z direction and $G^s_{y'z}$ is the shear modulus of the second material in the y'-z direction where y' is parallel to the outer surface and z is perpendicular thereto.

2. The joint assembly of claim 1, wherein the first material is a thermal insulator and the second material is a metal.

3. The joint assembly of claim 2, wherein the first material is a composite.

4. The joint assembly of claim 1, wherein the bonding material is adhesive.

5. A singularity-free adhesively bonded joint assembly adapted to rotate about a central axis through the joint assembly comprising:

a first member having a first surface at a first angle to an external surface of the first member and formed of composite;

a second member having a second surface at a second angle to an outer surface of the second member and formed of metal, each of the first and second materials being characterized by a shear modulus and the second angle being a function of the shear modulus of the composite and metal and of the first angle;

an adhesive which bonds the first and second members together, the adhesive being characterized by an adhesion stress and the composite is characterized by a composite stress;

the first angle being determined according to the equation:

$$\sin\phi = \frac{\sigma^a}{\sigma^c}$$

where σ^a is the adhesion stress and σ^c is the composite stress; and

the second angle being determined according to the equation:

$$\tan\beta = \frac{G^c_{yz}}{G^s_{y'z}} \bullet \tan\phi$$

where G^c_{yz} is a shear modulus of the composite in the y-z direction and $G^s_{y'z}$ is the shear modulus of the metal in the y'-z direction where y' is parallel to the outer surface and z is perpendicular thereto.

6. A method for forming a singularity-free bonded joint comprising the steps of:

providing a first member having a first surface at a first angle to an external surface of the first member and formed of a first material;

providing a second member having a second surface at a second angle to an outer surface of the second member and formed of a second material which is different from the first material, each of the first and second materials being characterized by a shear modulus and the second angle being a function of the shear modulus of the first and second materials and of the first angle;

connecting the first and second members together with a bonding material, the bonding material being characterized by a bonding stress;

the first angle being determined according to the equation:

$$\sin\phi = \frac{\sigma^a}{\sigma^c}$$

where σ^a is the bonding stress and σ^c is a shear stress of the first material; and

the second angle being determined according to the equation:

$$\tan\beta = \frac{G^c_{yz}}{G^s_{y'z}} \bullet \tan\phi$$

where G^c_{yz} is a shear modulus of the first material in the y-z direction and $G^s_{y'z}$ is the shear modulus of the second material in the y'-z direction where y' is parallel to the outer surface and z is perpendicular thereto.